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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,736	01/16/2005	Manfred Lang	23201	2720

7590 03/28/2006

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EXAMINER

O CONNOR, CARY E

ART UNIT	PAPER NUMBER
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3732

DATE MAILED: 03/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/523,736	Applicant(s) LANG ET AL	
	Examiner Cary E. O'Connor	Art Unit 3732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. As to claim 1, lines 15-16, the phrase "with a *substantial* outer diameter" is not understood. In claim 7, lines 3-4, the phrase "with a rigorously cylindrical outer shape" is not understood.

Claim 6 recites the limitation "the crestal anchoring surface" in 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 7 recites the limitation "the normal thread outer diameter" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim 7 recites the limitation "the crestal edge" in line 9. There is insufficient antecedent basis for this limitation in the claim.

Claim 8 recites the limitation "the conical pattern" and "the conical angle in lines 3-5. There is insufficient antecedent basis for these limitations in the claim.

Regarding claim 9, line 2, the phrase "preferably " renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

In claim 6, it is unclear what element the normal outer diameter is a diameter of.

The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Huebner (5,456,685). Huebner shows a bone implant 12 comprising an anchoring head 32 and a screw element. The screw element has a thread core and a self-cutting outer thread. The thread core and the outer thread have three segments. The three segments include a crestal segment 20 adjoining the head with the outer thread having a constant diameter and the core 24 conically tapering in the apical direction, a middle segment 18 where the outer diameter and the thread core have constant diameters (column 2, line 66), and a tip segment 16 with the outer thread and the core having tapering diameters in the apical direction. As to claim 3, the segments have the same length (column 3,

lines 2-4). Accordingly, the ratio of the axial lengths of the crestal segment to the middle segment is 1:1.

Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Ferrante et al (6,565,573). Ferrante shows a bone implant 30 comprising an anchoring head 32 and a screw element 34. The screw element has a thread core and a self-cutting outer thread. The thread core and the outer thread have three segments. The three segments include a crestal segment 50 adjoining the head with the outer thread having a constant diameter and the core conically tapering 56 in the apical direction, a middle segment 52 where the outer diameter and the thread core have constant diameters 46, 44, and a tip segment 54 with the outer thread and the core having tapering diameters in the apical direction. As to claim 3, the segments have the same length (column 3, lines 2-4). Accordingly, the ratio of the axial lengths of the crestal segment to the middle segment is 1:1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawnacki et al (5,816,812) in view of Ferrante et al (6,565,573). Kawnacki shows a bone implant 10 comprising an anchoring head D and a screw element. The screw

element has a thread core and a self-cutting outer thread. The thread core and the outer thread have three segments. The three segments include a crestal segment C adjoining the head with the outer thread having a constant diameter and the core conically tapering in the apical direction (column 2, lines 57-58), a middle segment B where the outer diameter and the thread core have constant diameters (column 2, lines 55-57), and a tip segment 16 with the outer thread having a tapering diameter in the apical direction (column 2, lines 53-55). The core diameter of the tip segment is constant through its length. Ferrante shows a bone screw having a tip segment where the outer thread and the core have tapering diameters in the apical direction so that the screw follows the pre-drilled hole more effectively and advances more easily into the bone (column 7, lines 19-31). It would have been obvious to one of ordinary skill in the art at the time the invention was made to form the tip segment of Kawnacki so that the core has a tapering diameter, as taught by Ferrante, in order to facilitate insertion of the implant into the bone.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Huebner (5,456,685) in view of Bjorn et al (6,896,517). The implant of Huebner does not include a double thread. Bjorn teaches, in column 1, lines 32-34, that it is known to provide implants with multiple threads to increase the speed of screwing in the implant. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the implant of Huebner with a double thread as taught by Bjorn, in order to increase the speed of insertion of the implant.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Huebner (5,456,685). Huebner discloses the claimed invention except for the ratio of the outer thread diameter in the crestal and middle segments to the outer thread diameter in the tip segment of about 4:3.5. It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the diameters of the crestal and middle segments and the tip segment with a ratio of 4:3.5, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ferrante et al (6,565,573) in view of Hurson (6,733,291). The anchoring head of Ferrante includes an internal hexagonal surface 58 adjacent a blind threaded bore 86. The hexagonal surface is not rounded with teeth. Hurson teaches that most antirotational means in an implant include sharp corners that are subject to chipping or wearing away. Hurson provides an antirotational means having rounded corners forming teeth. It would have been obvious to one of ordinary skill in the art at the time the invention was made to form the hexagonal socket of Ferrante with a rounded surfaces with teeth in view of the teachings of Hurson, in order to prevent chipping and wearing away of the sharp corners.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawnacki et al (5,816,812) in view of Ferrante et al (6,565,573) as applied to claim 1 above, and further in view of Wils (6,203,324). Kawnacki does not show a set of dental implant wherein in at least two of the implants a crestal surface of the anchoring head is

different from the thread outer diameter. Wils shows a set of dental implants wherein the crestal surface of the anchoring heads having diameters different from the outer thread diameters and different from one another. It would have been obvious to one of ordinary skill in the art at the time the invention was made to make a set of the dental implants of Kawnacki as modified by Ferrante wherein the crestal surface of the anchoring heads has diameters different from the outer thread diameters and different from one another, in order to accommodate different size needs.

Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawnacki et al (5,816,812) in view of Ferrante et al (6,565,573) as applied to claim 1 above, and further in view of Guedj (5,871,356). Kawnacki does not show a final drill having a conical cutting pattern that matches the conical pattern of the thread cores and with an outer diameter of the cores. Guedj shows a dental implant system wherein the final drill having a shape identical to the shape of the implant (column 2, lines 66-67) and a diameter the same as the thread core (column 2, line 30). This provides good contact of the implant with the bone without causing compression of the bone thereby diminishing the risk of failure (column 2, lines 50-55). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a final drill having a shape identical to the shape of the implant and a diameter the same as the thread core of the implant of Kawnacki as modified by Ferrante, in view of the teachings of Guedj that a implant put in a hole bored with a drill with these specifications provides good contact of the implant with the bone without causing compression of the bone

thereby diminishing the risk of failure. As to claim 9, the drill has a plurality of cutters in the regions 21, 22 which extend from the tip to a depth stop (see Figures 8 and 9).

Allowable Subject Matter

Claim 7 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Specification

The disclosure is objected to because of the following informalities: On page 14, line 5, "coating" should be changed to --cutting--.

Appropriate correction is required.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cary E. O'Connor whose telephone number is 571-272-4715. The examiner can normally be reached on M-Th 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Shaver can be reached on 571-272-4720. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Cary E. O'Connor
Primary Examiner
Art Unit 3732

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